

Exhibit 2: BAECCC Draft Goals and Objectives

Bay Area Ecosystems Climate Change Consortium

2010-2012 Goals

Revised Draft: September 2010



Bay Area Ecosystems Climate Change Consortium - BAECCC

The Bay Area Ecosystems Climate Change Consortium (BAECCC) identifies and addresses climate change impacts on ecosystems by using science to inform adaptive management for long-term ecological and economic benefits.

WHY: Recognizing the urgent need for coordinated, science-based strategies to address the impacts of accelerating climate change on ecological systems (www.climatescience.gov), federal, state and non-governmental research, management and planning agencies in the San Francisco region have joined forces to launch the Bay Area Ecosystems Climate Change Consortium (BAECCC). Through our joint efforts, we will provide a national model of cooperative, adaptive conservation to sustain nature's benefits to our communities (www.millenniumassessment.org) in the face of rapid environmental change. Working cooperatively, BAECCC members leverage expertise, funds and resources to more effectively address the ecological challenges of our time.

WHERE: BAECCC focuses on the ocean to the estuary – from the pelagic, near-shore and coastal areas of the Greater Gulf of the Farallones to the subtidal, tidal wetland and adjacent uplands of San Francisco Bay, stretching inland to Suisun Bay.

WHO: BAECCC founding members include California Coastal Conservancy, California Department of Fish and Game, National Park Service's Golden Gate National Recreation Area and Point Reyes National Seashore, NOAA's Coastal Services Center, NOAA's Gulf of the Farallones Marine Sanctuary, PRBO Conservation Science, San Francisco State University, US Fish and Wildlife Service's San Francisco Bay Refuge Complex, and US Geological Survey's Pacific Southwest Area as well as San Francisco Bay Conservation and Development Commission, San Francisco Bay Joint Venture and San Francisco Estuary Project.

WHAT: BAECCC members jointly assess climate change impacts at a regional scale; conduct scientific research and monitoring; develop predictive models to understand possible future changes and prioritize conservation actions; guide natural resource managers in employing, testing, and improving adaptive management strategies; and conduct outreach to local and regional stakeholders, policymakers and the public. Working with numerous agencies, NGOs, academia and other collaborators, BAECCC ensures timely, accessible, web-based information sharing as well as ongoing outreach to policymakers and the public to advance its vision.

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Overall Goal: BAECCC is working to secure nature's ecological and economic benefits to society by reducing the negative impacts of climate change on San Francisco Bay Area upland-estuarine-ocean wildlife, habitats and ecosystem function while also enhancing the role of natural systems in mitigating those impacts. BAECCC will create a more pro-active and informed approach to climate change among Bay Area institutions by actively engaging adaptation scientists with resource managers and regional planners to prioritize and coordinate climate change adaptation research, monitoring and management efforts, and thus overcome fragmented institutional approaches.

BIG PICTURE GOALS

-integrating resource managers, scientists and policy makers to jointly address impacts of accelerating climate change on natural resources to the benefit of the region, ecologically, economically

Ten Year Outcomes:

1. Science-based adaptive management approaches are identified, tested, implemented, and disseminated to reduce negative impacts of climate change and variability on coastal and ocean ecosystems as well as human communities.
2. Natural resource management protocols, plans, policies, regulations and statutes are revised and developed to prioritize greatest ecological response to increasingly unpredictable climate and greater extremes than experienced in the past century.
3. San Francisco ocean-estuary ecological systems have an enhanced ability to respond to rapid climate change to sustain ecological services on which our coastal communities rely.

As a robust, respected collaboration of scientists and resource managers BAECCC will assess scientific and resource management needs and guide adaptation actions and investments for coastal, estuarine, wetland, and upland resources in the Bay Area. BAECCC will develop and describe these in several key products as described below, including a "research strategic plan" that prioritizes the most important and urgent gaps in scientific research and monitoring needed for effective adaptation of Bay Area ecosystems to climate change; a Technical Update of the 1999 San Francisco "Baylands Ecosystem Habitat Goals" report; a set of the most effective "best management practices" for ocean, estuarine and upland ecological adaptation; and, a BAECCC web portal with user friendly web-based materials to inform the public, resource managers and policymakers and to improve conservation outcomes in the face of accelerating climate change.

BAECCC will ultimately serve as the "go-to" entity for state, federal and regional efforts addressing climate change impacts and ecosystem adaptation on a practical eco-regional scale. Already, the US Department of Interior's CA Landscape Conservation Cooperative and the California Resources Agency's SF Bay Adaptation Plan being developed through the Bay Conservation and Development Commission have engaged with BAECCC to seek guidance on ecosystem impacts and adaptation actions.

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To increase knowledge and implementation of best practices for creating effective boundary organizations that effectively link the scientific community and natural resource managers to address climate change adaptation, BAECCC will document and communicate its experience and lessons learned. BAECCC will produce a manuscript for submission to a peer-reviewed publication that evaluates and disseminates lessons learned in linking science and resource management to address climate change adaptation. Sharing this experience will help establish and strengthen other efforts in the US and around the world.

BAECCC will address the urgent need for coordination of science and resource management efforts to create a more informed and pro-active approach to climate change ecological mitigation and adaptation among Bay Area institutions by implementing the following activities:

- 1) Establish BAECCC as a consortium of scientists and resource managers to guide and implement effective ecosystem adaptation for the Bay Area's ecosystems including assessing science and management needs and developing priorities.
 - a) Develop detailed multi- year work plan including to initiate, facilitate and integrate the Consortium including:
 - (1) Develop structure, governance, engagement and appropriate representation of partners, and information flow
 - (2) Ensure integration of Bay Area ocean, estuarine and upland resource management and research efforts to address climate change impacts.
 - (3) Identify and begin developing mechanisms for more ongoing funding for staffing, project seed funding and other needs
 - (4) Oversee coordinator and activities for Baylands Goals Technical Update
 - b) Coordinate meetings and ensure regular communication of consortium members and committees.
 - c) Coordinate implementation of consortium projects.
 - d) Coordinate with existing conservation partnerships such as the San Francisco Bay Joint Venture, the California Landscape Conservation Cooperative and the ACCESS Oceans research partnership.
 - e) Represent BAECCC to other entities addressing related issues including scientific meetings, workshops, media events, etc.
 - f) Coordinate with and provide leadership to significant public climate and ecosystem science and policy efforts, such as the State of California Climate Action Team.

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- g) Other activities as directed by the Executive Committee.
- 2) Identify gaps in science, monitoring and management actions and develop a prioritized “Research Strategic Plan” for ecosystem adaptation to climate change in the Bay Area and to guide researchers.
 - a) Develop a BAECCC Science Committee, with responsibilities that include reviewing existing literature and practices, identifying gaps and develop comprehensive lists of applicable research materials and related information that can be used now in the Bay Area.
 - b) Facilitate a process that engages Bay Area uplands-estuarine-ocean resource managers and scientists to jointly identify priority management needs and how that can inform the science.
 - c) Develop strategy to implement research and management needs including potential RFP process, pilot studies, etc.
 - d) Conduct and support comprehensive, science-based research that facilitates current understanding of the impacts of climate change on ecosystems.
 - e) Develop long term monitoring protocol and indicators, to provide early indicators of change and improve adaptive management practices.
 - f) Identify and prioritize high value upland, estuarine and marine habitats for protection, using existing conservation plans such as the Upland Habitat Goals Project and the Gulf of the Farallones National Marine Sanctuary 2010 Climate Summit Recommendations.
 - g) Ensure research is translated for understanding and application by managers.
- 3) Initiate and complete the “Climate Change Technical Update of the San Francisco Baylands Goals” to address climate change impacts on estuarine habitats.
 - a) Coordinate science-based, collaboratively produced estuarine adaptation strategies and guidelines, addressing key factors including sea level rise, storm surges, sedimentation, invasives and salinity.
 - b) Prioritize focal areas for adaptation investments in the decades ahead.
 - c) Identify incremental measures to sustain marshes and utilize them to mitigate impacts on human infrastructure.
 - d) Address dredging and other strategies and policies to secure required sedimentation needs.

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- e) Assess and recommend regulatory and policy changes needed to sustain healthy tidal habitats over the long term.
- 4) Identify current, most effective first draft “best management practices” for ecosystem adaptation to climate change in the Bay Area and assess, compile, and disseminate.
 - a) Establish and facilitate a Management Practices Committee, including scientists and managers.
 - b) Survey and develop inventory of global ecosystem adaptation management best practices and prioritize those relevant to Bay Area upland-estuarine-marine ecosystems.
 - c) Develop, disseminate and train using an “Adaptation Best Practices Tool Box” for natural resource managers.
 - d) Develop plan for regularly updating and improving the Tool Box and its management application into the future.
 - e) Initiate pilot projects in marine, coastal and upland habitats to test, demonstrate and improve “best management practices” for ecosystem adaptation.
 - f) Conduct annual or biannual workshops for researchers and managers to share priorities, needs and findings.
- 5) Develop a case study documenting, evaluating and disseminating lessons learned from BAECCC’s experience as an example of a consortium linking science with resource management to guide and accelerate implementation of climate change adaptation.
 - a) Engage a researcher(s) to design methodology and scope of case study project
 - b) Determine whether to include other consortiums as part of the case studies to learn how we might improve BAECCC’s work
 - c) Disseminate, publish and present case study results.
- 6) Begin developing plan for establishing long term monitoring network including what would be monitored, where and how, and how to capture the information to drive applied conservation efforts.
 - a) By end of year 2, complete a plan for establishing a network of monitoring sites and monitoring protocols to provide early indicators of change
 - b) Work with BAECCC Science Committee and others to identify and agree upon initial indicators (physical and biological) for monitoring.

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- c) Ensure monitoring supports and is tied to identified research and management gaps and needs.
- 7) Establish BAECCC as the greater Bay Area hub for climate change science and management communications.
 - a) Coordinate the gathering and dissemination of critical information for effective ecosystem adaptive management.
 - b) Develop and publish user friendly, web-based materials to inform managers, scientists, policymakers and the public.
- 8) Establish shared informatics capacity and systems for the Bay Area ecosystem adaptation science and management.
 - a) Build on existing informatics capacity of regional partners.
 - b) Establish Informatics Task Force to design the BAECCC data portal and distributed data bases.
- 9) Seek additional funding to support this innovative partnership and export lessons learned to other entities regionally, nationally and globally.
 - a) By the end of year 2, the BAECCC Coordinator working with BAECCC members will secure new funding for coordination, pilot projects, communications and other BAECCC activities.
 - b) Build funding coalitions with BAECCC partners and others.